



DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : CP-RW-2018-07-21-05 Date: 23-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 4)Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 21-07-18
Sample ID No : 2018-07-21-05/01
Type of Mix : Tack coat
Date of test : 21-07-18

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.784	0.741
4	Final weight of plate after application of tack Coat (c)	Kg	0.807	0.764
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

Note:-

The results pertain to the samples received and tested.

All information Furnished by Customer/ Representative

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R KARTHIK RECHAN
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Quality Manager

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Assistant Executive Engineer,
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

**TEST RESULTS OF BITUMEN BINDER CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)**

Lab ID : CP-RW-2018-07-21-05 **Date:** 23-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Date of Receipt : 21-07-18
Sample ID No : 2018-07-21-05/01
Type of Mix : BC (Bituminous Concrete)
Date of test : 21-07-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	473	472
3	Bitumen percentage	$\frac{A-B}{A} \times 100$ A	5.40	5.60
4	Average percentage	%	5.5	

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Lab ID : CP-RW-2018-07-21-05

Date: 23-07-18

Sample ID : 2018-07-21-05/01

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 473

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	5	5	1.0	99.0	90-100
9.5	80	85	17.9	82.1	70-88
4.75	113	198	41.8	58.2	53-71
2.36	19	217	45.8	54.2	42-58
1.18	28	245	51.8	48.2	34-48
0.6	66	311	65.7	34.3	26-38
0.3	42	353	74.7	25.3	18-28
0.15	33	386	81.7	18.3	12-20
0.075	38	424	89.6	10.4	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	47	47	10.0	90.0	90-100
9.5	47	95	20.0	80.0	70-88
4.75	76	170	36.1	63.9	53-71
2.36	43	213	45.1	54.9	42-58
1.18	57	270	57.1	42.9	34-48
0.6	71	341	72.2	27.8	26-38
0.3	24	364	77.2	22.8	18-28
0.15	14	378	80.2	19.8	12-20
0.075	57	435	92.2	7.8	4-10

Note:

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Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
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Quality Manager



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Lab ID : CP-RW-2018-07-18-05

Date: 19-07-18

Sample ID No : 2018-07-18-05/01

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 476

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0.0	100.0	100
26.5	40	40	8.4	91.6	90-100
19	48	88	18.5	81.5	71-95
13.2	50	138	29.0	71.0	56-80
4.75	135	273	57.4	42.6	38-54
2.36	38	311	65.3	34.7	28-42
0.3	68	379	79.6	20.4	7-21
0.075	75	454	95.4	4.6	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 478

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0.0	100.0	100
26.5	45	45	9.4	90.6	90-100
19	52	97	20.3	79.7	71-95
13.2	18	115	24.1	75.9	56-80
4.75	145	260	54.4	45.6	38-54
2.36	70	330	69.0	31.0	28-42
0.3	52	382	79.9	20.1	7-21
0.075	75	457	95.6	4.4	2-8

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2018-06-26-08 Date: 29-06-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer's Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 26-06-18
Sample ID No : 2018-06-26-08 /01
Sample Type : Birla Super 53grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11, DETERMINATION OF DENSITY , Clause 6
Date of test : 27-06-18
Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.05	—
2	Finess by Air permeability method (m ² /kg, Min)	298.6	225m ² /kg, Min
3	Density (gm/cc)	3.13	—
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time (minutes)	135 minutes	Not less than 30 minutes
6	Final Setting time (minutes)	255 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method) (mm)	1.5mm	Not more than 10 mm

Note:

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R. KARTHIK RECHAN
Authorized Signatory
Quality Manager

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Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2018-06-26-08 **Date:** 25-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer's Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 26-06-18
Sample ID No : 2018-06-26-08 /01
Sample Type : Birla Super 53grade.
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test : 27-06-18
Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Compressive Strength			
Sl.No.	Physical properties	Results (N/mm ²)	Requirement as per IS 12269: 2013
1	3 Days	29.5N/mm ²	Not less than 27 N/mm ²
2	7 Days	39.5N/mm ²	Not less than 37 N/mm ²
3	28 Days	58.5N/mm ²	Not less than 53 N/mm ²

Note:

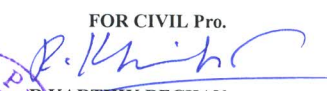
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Quality Manager



Format No: CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2018-06-26-08 **Date:** 29-06-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lotteghalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lotteghalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample condition : Satisfactory

Date of Receipt : 26-06-18

Sample ID No : 2018-06-26-08 /02(a)

Sample Type : 40mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 26-06-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	385	385	2.6	97.4	90-100
3	20 mm	7048	7433	49.6	50.4	30-70
4	10 mm	4396	11829	78.9	21.1	10-35
5	4.75 mm	2845	14674	97.8	2.2	0-5
6	Pan	326	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2018-06-26-08

Date: 29-06-18

Sample ID No : 2018-06-26-08 /02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.9	
3	Specific Gravity	2.64	—
4	Bulk Density(Loose) (Kg/l)	1.42	—
5	Bulk Density(Compacted) (Kg/l)	1.48	—
6	Water Absorption(%)	0.23	—

Note:

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Assistant Executive Engineer
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2018-06-26-08 Date: 29-06-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 26-06-18

Sample ID No : 2018-06-26-08 /03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption

Date of test : 26-06-18

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	57	57	5.7	94.3	90-100	90-100	90-100	95-100
3	2.36 mm	129	186	18.6	81.4	60-95	75-100	85-100	95-100
4	1.18 mm	219	405	40.5	59.5	30-70	55-90	75-100	90-100
5	600 micron	203	608	60.8	39.2	15-34	35-59	60-79	80-100
6	300 micron	179	787	78.7	21.3	5-20	8-30	12-40	15-50
7	150 micron	149	936	93.6	6.4	0-10	0-10	0-10	0-15
8	Pan	64	1000	100.0	0.0	---	---	---	---

Result : The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2018-06-26-08

Date: 29-06-18

Sample ID No : 2018-06-26-08 /03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.48	—
2	Specific Gravity	2.58	—
3	Material finer than 75 micron(%)	5.5	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Quality Manager

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone B.B.M.P.,
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TEST RESULTS OF STEEL

Lab ID : CP-2018-06-26-08 Date: 28-06-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 26-06-18

Sample ID No : 2018-06-26-08 /05

Sample Type : Sunvik

Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.

Date of test: : 27-06-18

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm ²)	(N/mm ²)	(%)		
1	Sunvik	Fe500	8	0.393	508	532	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	10	0.612	528	560	20.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.885	543	572	20.0%	Satisfactory	Satisfactory

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-12-08 **Date:** 16/07/2018

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-07-18

Sample ID No : 2018-07-12-08 /03

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 16/07/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Concrete	M20	07/07/2018	16/07/2018	149.21 X 149.80 X 151.99	22353	8.379	419.2	18.8	18.6
2	Drain Concrete	M20	07/07/2018	16/07/2018	149.14 X 151.67 X 150.74	22620	8.098	420.3	18.6	
3	Drain Concrete	M20	07/07/2018	16/07/2018	151.79 X 150.30 X 151.65	22814	8.145	423.0	18.5	

Note:

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[Handwritten signature]

Assistant Executive Engineer
 Kodigehalli Sub Division,
 Yelahanka Zone, B.B.M.P.,
 Bangalore.



FOR CIVIL Pro.

R. KARTHIK RECHAN
 Authorized Signatory
 Quality Manager

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Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-12-08 Date: 06/08/2018
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lotteghalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lotteghalli in Ward No.08 Kodigehalli
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer's Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 12-07-18
Sample ID No : 2018-07-12-08 /04
Customer ID : Drain Concrete
Sample Type /Size : 150X150X150 mm
Sample grade/Age : M20 / 28 Days Compressive Strength
Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 06/08/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Concrete	M20	07/07/2018	06/08/2018	151.71 X 150.52 X 151.39	22835	8.353	531.8	23.3	23.0
2	Drain Concrete	M20	07/07/2018	06/08/2018	149.70 X 151.33 X 149.68	22653	8.335	499.8	22.1	
3	Drain Concrete	M20	07/07/2018	06/08/2018	151.46 X 150.18 X 149.98	22747	8.167	535.7	23.6	

Note:

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Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

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B KARTHIK RECHAN
Authorized Signatory
Quality Manager

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Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-12-08 Date: 16/07/2018

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-07-18

Sample ID No : 2018-07-12-08 /01

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 16/07/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Concrete	M20	07/07/2018	16/07/2018	149.07 X 150.95 X 151.13	22502	8.012	412.5	18.3	18.6
2	Drain Concrete	M20	07/07/2018	16/07/2018	151.13 X 149.60 X 150.97	22608	8.125	422.9	18.7	
3	Drain Concrete	M20	07/07/2018	16/07/2018	149.33 X 151.03 X 150.69	22552	8.154	421.0	18.7	

Note:

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(Signature)

Assistant Executive Engineer
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

FOR CIVIL Pro.
B. KARTHIK RECHAN
Authorized Signatory
Quality Manager

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Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-12-08 Date: 06/08/2018

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-07-18

Sample ID No : 2018-07-12-08 /02

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 06/08/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Concrete	M20	07/07/2018	06/08/2018	149.09 X 149.30 X 150.83	22259	8.573	530.8	23.8	23.3
2	Drain Concrete	M20	07/07/2018	06/08/2018	151.34 X 150.41 X 150.51	22762	8.145	511.0	22.5	
3	Drain Concrete	M20	07/07/2018	06/08/2018	150.77 X 149.51 X 149.28	22542	8.331	531.7	23.6	

Note:

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(Signature)

Page 1/1
Assistant Executive Engineer
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.



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R. KARTHIK RECHAN
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Quality Manager

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Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-12-08 Date: 16/07/2018

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-07-18

Sample ID No : 2018-07-12-08 /05

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 16/07/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Concrete	M20	09/07/2018	16/07/2018	150.48 X 151.88 X 150.39	22854	8.254	417.9	18.3	18.6
2	Drain Concrete	M20	09/07/2018	16/07/2018	150.27 X 150.84 X 150.39	22667	8.395	423.8	18.7	
3	Drain Concrete	M20	09/07/2018	16/07/2018	151.50 X 150.92 X 151.57	22864	8.307	431.1	18.9	

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[Signature]

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.



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R KARTHIK RECHAN
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Quality Manager

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Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-12-08 **Date:** 06/08/2018

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-07-18

Sample ID No : 2018-07-12-08 /06

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 06/08/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Concrete	M20	09/07/2018	06/08/2018	150.13 X 150.50 X 149.79	22595	8.480	538.9	23.9	23.3
2	Drain Concrete	M20	09/07/2018	06/08/2018	150.15 X 149.18 X 150.91	22400	8.211	494.0	22.1	
3	Drain Concrete	M20	09/07/2018	06/08/2018	151.67 X 151.96 X 151.43	23048	8.177	553.1	24.0	

Note:

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Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, BBMP,
Bangalore.

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End of Report



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Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-12-08 **Date:** 16/07/2018

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegothalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegothalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-07-18

Sample ID No : 2018-07-12-08 /07

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 16/07/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Concrete	M20	09/07/2018	16/07/2018	149.78 X 151.89 X 150.49	22750	8.149	412.2	18.1	18.4
2	Drain Concrete	M20	09/07/2018	16/07/2018	150.04 X 149.22 X 150.28	22389	8.286	420.2	18.8	
3	Drain Concrete	M20	09/07/2018	16/07/2018	151.44 X 151.10 X 150.47	22882	8.336	421.7	18.4	

Note:

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[Signature]

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.



FOR CIVIL Pro.

R. KARTHIK RECHAN
Authorized Signatory
Quality Manager



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Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-12-08 **Date:** 06/08/2018

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli. 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-07-18

Sample ID No : 2018-07-12-08 /08

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 06/08/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Drain Concrete	M20	09/07/2018	06/08/2018	151.34 X 151.39 X 149.19	22911	8.325	545.1	23.8	23.0
2	Drain Concrete	M20	09/07/2018	06/08/2018	151.76 X 150.74 X 150.88	22877	8.457	507.8	22.2	
3	Drain Concrete	M20	09/07/2018	06/08/2018	149.07 X 150.25 X 150.29	22398	8.194	518.5	23.2	

Note:

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(Signature)

(Signature)
 Assistant Executive Engineer.
 Kodigehalli Sub Division,
 Yelahanka Zone, B.B.M.P.,
 Bangalore.



FOR CIVIL Pro.

(Signature)
 R. KARTHIK RECHAN
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Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-13-03 Date: 17/07/2018

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 13-07-18

Sample ID No : 2018-07-13-03 /01

Customer ID : CC Pavement

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M30 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/07/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	CC Pavement	M30	10/07/2018	17/07/2018	150.58 X 150.28 X 151.13	22629	8.365	566.3	25.0	25.5
2	CC Pavement	M30	10/07/2018	17/07/2018	150.09 X 149.91 X 151.67	22500	8.184	600.0	26.7	
3	CC Pavement	M30	10/07/2018	17/07/2018	149.60 X 149.62 X 150.05	22384	8.047	553.5	24.7	

Note:

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Assistant Executive Engineer
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.



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Certificate No.: TC- 5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-07-13-03 Date: 07/08/2018

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 2)Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 13-07-18

Sample ID No : 2018-07-13-03 /02

Customer ID : CC Pavement

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M30 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 07/08/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	CC Pavement	M30	10/07/2018	07/08/2018	150.25 X 149.43 X 149.03	22452	8.351	758.4	33.8	33.2
2	CC Pavement	M30	10/07/2018	07/08/2018	151.90 X 151.53 X 151.49	23017	8.476	749.7	32.6	
3	CC Pavement	M30	10/07/2018	07/08/2018	151.53 X 149.07 X 149.26	22589	8.422	748.6	33.1	

Note:

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Assistant Executive Engineer,
Kodigehalli Sub Division,
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TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2018-07-09-05 **Date:** 12-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Hot Mix Plant, Bangalore
Sample Condition : Satisfactory
Date of Receipt : 09-07-18
Sample ID No : 2018-07-09-05/01
Type of Mix : BC (Bituminous Concrete)
Date of test : 09-07-18

The results of the tests conducted on the Bituminous Concrete mix sample are as follow				
Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	10.83	11.66	10KN(min)
2	Marshal flow at 60°C, mm	3.78	3.49	2-4
3	Percent air Voids	4.50	3.68	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.40	13.93	13-15
5	Percent Voids filled with Bitumen(VFB %)	73.82	70.96	65-75
6	Density, g/cc	2.25	2.26	—

Note:-

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Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.



TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGREGATE (IS:6241)

Lab ID : CP-RW-2018-07-09-05 Date: 12-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 09-07-18
Sample ID No : 2018-07-09-05/01
Type of Mix : BC(Bitumenous Concrete)
Date of test : 09-07-18

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	96.7	3.3	97.7	Minimum Retained Coating 95%
2	97.8	2.2		
3	98.7	1.3		

Note:

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All information furnished by Customer/Representative
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[Handwritten signature]

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Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
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Certificate No.: TC- 5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : CP-RW-2018-07-09-05 Date: 12-07-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 09-07-18

Sample ID No : 2018-07-09-05/01

Type of Mix : BC (Bituminous Concrete)

Date of test : 09-07-18

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	13.57	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	8.75		
Strength	Aggregate Impact Value	23.19	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.61	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	1.62	Maximum 2%	IS:2386 Part III

Note:

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TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : CP-RW-2018-07-09-05 Date: 12-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 09-07-18
Sample ID No : 2018-07-09-05/01
Type of Mix : BC-Plant (Bituminous Concrete)
Date of test : 09-07-18
Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	450	450	9.0	91.0	90-100
9.5	850	1300	26.0	74.0	70-88
4.75	650	1950	39.0	61.0	53-71
2.36	650	2600	52.0	48.0	42-58
1.18	350	2950	59.0	41.0	34-48
0.6	700	3650	73.0	27.0	26-38
0.3	300	3950	79.0	21.0	18-28
0.15	450	4400	88.0	12.0	12-20
0.075	350	4750	95.0	5.0	4-10
PAN	250	5000	100	0.0	0

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Yelahanka Zone, B.B.M.P.,
Bangalore

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager



TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : CP-RW-2018-07-05-09 Date: 09-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 05-07-18
Sample ID No : 2018-07-05-09/01
Type of Mix : DBM(Dense Bitumnous Macadam)
Date of test : 05-07-18

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

Note:-

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Quality Manager

Assistant Executive Engineer
Kodigehalli Sub Division,
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TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2018-07-05-09 **Date:** 09-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Hot Mix Plant, Bangalore
Sample Condition : Satisfactory
Date of Receipt : 05-07-18
Sample ID No : 2018-07-05-09/01
Type of Mix : DBM (Dense Bituminous Mecadam)
Date of test : 05-07-18

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	—

Note:-

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All information furnished by Customer/Representative

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Assistant Executive Engineer,
Kodigehalli Sub Division,
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Page 1/1
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Certificate No.: TC- 5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR DENSE BITUMINOUS MACADAM

Lab ID : CP-RW-2018-07-05-09 **Date:** 09-07-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 05-07-18

Sample ID No : 2018-07-05-09/01

Type of Mix : DBM (Dense Bituminous Macadam)

Date of test : 05-07-18

Table 500-6 : Physical Requirements fo Coarse Aggregate for Dense Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	14.1	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	13.2		
Strength	Aggregate Impact Value	20.2	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.6	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	1.4	Maximum 2%	IS:2386 Part III

Note:-

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Assistant Executive Engineer
Kodigehalli Sub Division
Yelahanka Zone, B.B.M.P.
Bangalore.



Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID : CP-2018-07-02-09 **Date:** 03-07-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 02-07-18

Sample ID No : 2018-07-02-09/01

Sample Type : Bitumen

Reference to BIS codes : IS: 1201-1220(1978) (Reaffirmed-2004)

Date of test : 02-07-18

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	68	60 to 70
2	Softening Point, °C	43.8	Min. 40°C
3	Ductility, cm	97	Min. 75cm
4	Flash point, °C	228	Min. 220°C
	Fire point, °C	248	

Note:

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Quality Manager

Assistant Executive Engineer
Kodigehalli Sub Division,
Yelahanka Zone, B.M.P.,
Bangalore.



**TEST RESULTS OF GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011))**

Lab ID : CP-RW-2018-07-05-09 Date: 07-07-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lotteghalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 05-07-18

Sample ID No : 2018-07-05-09/01

Type of Mix : DBM-Plant (Dense Bituminous Macadam)

Date of test : 05-07-18

Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	172	172	3.44	96.56	90-100
19	1013	1185	23.70	76.30	71-95
13.2	520	1705	34.10	65.90	56-80
4.75	1150	2855	57.10	42.90	38-54
2.36	680	3535	70.70	29.30	28-42
0.3	950	4485	89.70	10.30	7-21
0.075	272	4757	95.14	4.86	2-8
PAN	243	5000	0.00	0	0

Note:-

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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R. KARTHIK RECHAN

Authorized Signatory

Quality Manager



Signature

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC- 5548

**DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF
COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007)**

Lab ID : CP-RW-2018-06-27-05 **Date:** 29-06-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 27-06-18
Sample ID No : 2018-06-27-05/01
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 27-06-18

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	17.3%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	16.8%	
Combined Flakiness and Elongation Index for WMM	34.1%	

Note:-

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(Signature)

(Signature)
Assistant Executive Engineer,
Kodigehalli Sub Division
Yelahanka Zone, B.B.M.P.,
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R KARTHIK RECHAN
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**TEST REPORT OF AGGEGRATE IMPACT VALUE****IS: 2386 Part IV**

Lab ID : CP-RW-2018-06-27-05 Date: 29-06-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 27-06-18
Sample ID No : 2018-06-27-05/01
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 27-06-18

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	307.0	307.0
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	86.0	71.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	220.7	235.5
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.5
5	Aggregate impact value	(B/A)*100	28.0	23.1
6	Aggregate impact value (Mean of two tests)	Percentage	25.6	

Note:-

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Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
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Quality Manager



TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2018-06-30-06 Date: 02-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/VO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 30-06-18
Sample ID No : 2018-06-30-06/04
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 30-06-18
Oven Dry Weight : 10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	300	300	3.0	97.0	95-100
22.4	1800	2100	21.0	79.0	60-80
11.2	2400	4500	45.0	55.0	40-60
4.75	3000	7500	75.0	25.0	25-40
2.36	100	7600	76.0	24.0	15-30
0.6	1300	8900	89.0	11.0	8-22
0.075	1000	9900	99.0	1.0	0-5

Note:-

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Final Report*

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Quality Manager





TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2018-06-29-03 Date: 02-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lotteghalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/VO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 29-06-18
Sample ID No : 2018-06-29-03/03
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 29-06-18
Oven Dry Weight : 10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	300	300	3.0	97.0	95-100
22.4	2100	2400	24.0	76.0	60-80
11.2	3300	5700	57.0	43.0	40-60
4.75	1200	6900	69.0	31.0	25-40
2.36	500	7400	74.0	26.0	15-30
0.6	1800	9200	92.0	8.0	8-22
0.075	600	9800	98.0	2.0	0-5

Note:-

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2018-06-28-06 Date: 30-06-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 28-06-18
Sample ID No : 2018-06-28-06/02
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 28-06-18
Oven Dry Weight : 10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	200	200	2.0	98.0	95-100
22.4	2500	2700	27.0	73.0	60-80
11.2	2500	5200	52.0	48.0	40-60
4.75	2200	7400	74.0	26.0	25-40
2.36	100	7500	75.0	25.0	15-30
0.6	800	8300	83.0	17.0	8-22
0.075	1400	9700	97.0	3.0	0-5

Note:-

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2018-06-27-05 Date: 29-06-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 27-06-18
Sample ID No : 2018-06-27-05/01
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 27-06-18
Oven Dry Weight : 10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	400	400	4.0	96.0	95-100
22.4	2000	2400	24.0	76.0	60-80
11.2	2700	5100	51.0	49.0	40-60
4.75	1700	6800	68.0	32.0	25-40
2.36	1200	8000	80.0	20.0	15-30
0.6	100	8100	81.0	19.0	8-22
0.075	1500	9600	96.0	4.0	0-5

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Kodigehalli Sub Division,
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**TEST RESULTS OF BITUMEN BINDER CONTENT AND GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011))**

Lab ID : CP-RW-2018-07-17-06 **Date:** 18-07-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.

Name of Work : 3)Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli

Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094

Customer Reference : BBMP/EE/BTP/WO/10/2018-19

Source of Sample : Sample supplied by Agency

Date of Receipt : 17-07-18

Sample ID No : 2018-07-17-06/01

Type of Mix : DBM (Dense Bituminous Macadam)

Date of test : 17-07-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	477	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.6	4.8
4	Average percentage	%	4.7	

Amu



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Authorized Signatory
Quality Manager



Lab ID : CP-RW-2018-07-17-06
Sample ID No : 2018-07-17-06/01
AFTER EXTRACTION(Trail-1)

Date: 18-07-18

Weight of Sample(gm)	:	477			
IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0.0	100.0	100
26.5	35	35	7.3	92.7	90-100
19	39	74	15.5	84.5	71-95
13.2	49	123	25.8	74.2	56-80
4.75	135	258	54.1	45.9	38-54
2.36	30	288	60.4	39.6	28-42
0.3	95	383	80.3	19.7	7-21
0.075	60	443	92.9	7.1	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm)	:	476			
IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0.0	100.0	100
26.5	44	44	9.2	90.8	90-100
19	50	94	19.7	80.3	71-95
13.2	25	119	25.0	75.0	56-80
4.75	165	284	59.7	40.3	38-54
2.36	50	334	70.2	29.8	28-42
0.3	60	394	82.8	17.2	7-21
0.075	68	462	97.1	2.9	2-8

Note:-

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All information furnished by Customer/Representative

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R. Karthik Rechan
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Page 2/2
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[Signature]
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Kodigehalli Sub Division,
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Bangalore.



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : CP-RW-2018-07-20-09 Date: 21-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 3)Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 20-07-18
Sample ID No : 2018-07-20-09/01
Type of Mix : Tack coat
Date of test : 20-07-18

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.79	0.75
4	Final weight of plate after application of tack Coat (c)	Kg	0.813	0.773
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

Note:-

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**TEST RESULTS OF BITUMEN BINDER CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)**

Lab ID : CP-RW-2018-07-20-09 Date: 21-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 3)Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Date of Receipt : 20-07-18
Sample ID No : 2018-07-20-09/01
Type of Mix : BC (Bituminous Concrete)
Date of test : 20-07-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	474	472
3	Bitumen percentage	$\frac{A-B}{A} \times 100$ A	5.20	5.60
4	Average percentage	%	5.4	

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R. KARTHIK RECHAN
Authorized Signatory
Quality Manager

Lab ID : CP-RW-2018-07-20-09

Date: 21-07-18

Sample ID : 2018-07-20-09/01

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	19	19	4.1	95.9	90-100
9.5	62	82	17.2	82.8	70-88
4.75	101	182	38.5	61.5	53-71
2.36	48	230	48.6	51.4	42-58
1.18	53	283	59.7	40.3	34-48
0.6	24	307	64.8	35.2	26-38
0.3	43	350	73.9	26.1	18-28
0.15	38	389	82.0	18.0	12-20
0.075	43	432	91.1	8.9	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	43	43	9.1	90.9	90-100
9.5	77	120	25.4	74.6	70-88
4.75	29	148	31.5	68.5	53-71
2.36	81	230	48.7	51.3	42-58
1.18	86	316	67.0	33.0	34-48
0.6	5	321	68.0	32.0	26-38
0.3	29	350	74.1	25.9	18-28
0.15	72	422	89.3	10.7	12-20
0.075	34	455	96.4	3.6	4-10

Note:

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager



Assistant Executive Engineer
Kodigehalli Division
Yelahanka Zone, B.B.M.P.,
Bangalore.



AN ISO 9001 : 2008 COMPANY &NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

4, 7TH MAIN MALLESWARAM, BANGALORE -3

DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : CP-RW-2018-07-24-04 Date: 25-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegehalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 1)Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 24-07-18
Sample ID No : 2018-07-24-04/01
Type of Mix : Tack coat
Date of test : 24-07-18

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.785	0.752
4	Final weight of plate after application of tack Coat (c)	Kg	0.808	0.775
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

Note:-

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : CP-RW-2018-07-23-04 Date: 24-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 1)Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 23-07-18
Sample ID No : 2018-07-23-04/01
Type of Mix : Tack coat
Date of test : 23-07-18

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

**TEST RESULTS OF BITUMEN BINDER CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)**

Lab ID : CP-RW-2018-07-25-02 Date: 26-07-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Pacakage-5, includes 4 works of Rs.170.00 lakhs 1) Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli. 2) Improvements to Roads and Drains at Devinagara and Lottegohalli in Ward No.08 Kodigehalli, 3) Improvements to Roads and Drains at Balaji Layout and Surroundings in Ward No.08 Kodigehalli 4) Providing and laying new road at Sannegowda Layout and Surrounding in Ward No.08 Kodigehalli.
Name of Work : 1)Reasphalting to main and cross roads at 'B', 'C' and 'D' Blocks of Sahakaranagara in Ward No.08 Kodigehalli.
Agency : M/s KBR infratech Limited, #01, 1st Floor, 8th main, RMV Extn 2nd Stage, Tatanagara, Bangalore-560094
Customer Reference : BBMP/EE/BTP/WO/10/2018-19
Source of Sample : Sample supplied by Agency
Date of Receipt : 25-07-18
Sample ID No : 2018-07-25-02/01
Type of Mix : BC (Bituminous Concrete)
Date of test : 25-07-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	474	472
3	Bitumen percentage	$\frac{A-B}{A} \times 100$ A	5.20	5.60
4	Average percentage	%	5.4	

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Quality Manager





Lab ID : CP-RW-2018-07-25-02

Date: 26-07-18

Sample ID : 2018-07-25-02/01

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	5	5	1.0	99.0	90-100
9.5	80	85	17.9	82.1	70-88
4.75	113	198	41.7	58.3	53-71
2.36	19	217	45.7	54.3	42-58
1.18	28	245	51.7	48.3	34-48
0.6	66	311	65.6	34.4	26-38
0.3	42	353	74.5	25.5	18-28
0.15	33	386	81.5	18.5	12-20
0.075	38	424	89.4	10.6	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	47	47	10.0	90.0	90-100
9.5	47	95	20.0	80.0	70-88
4.75	76	170	36.1	63.9	53-71
2.36	43	213	45.1	54.9	42-58
1.18	57	270	57.1	42.9	34-48
0.6	71	341	72.2	27.8	26-38
0.3	24	364	77.2	22.8	18-28
0.15	14	378	80.2	19.8	12-20
0.075	57	435	92.2	7.8	4-10

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End of Report

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